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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/809,577	03/15/2001	Menachem Levanoni	YOR920010163US1	5893

7590

07/09/2003

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EXAMINER

PHAM, THOMAS K

ART UNIT

PAPER NUMBER

2121

DATE MAILED: 07/09/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/809,577

Applicant(s)

LEVANONI ET AL.

Examiner

Thomas K Pham

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 15 March 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other:  |

*Notice to Applicant(s)*

1. Claims 1-11 of U.S. Application 09/809577 filed on 15 March 2001 are presented for examination.

**DETAILED ACTION**

*Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Page 7 lines 4-5 of claim 3 includes a new subject matter "interpolation" techniques that was not described in detail of how the techniques will be used in light of the invention.
4. Claims 4 and 5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Page 7 lines 11-12 of claim 6 includes a new subject matter "interpolating map" that was not described in detail of how the techniques will be used in light of the invention.
5. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described

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in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Page 8 line 1-2 of claim 8 includes a new subject matter "regression" as the modeling technique that was not described in detail of how the technique will be employed in light of the invention.

6. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Page 8 line 3-4 of claim 9 includes a new subject matter "expert systems or fuzzy logic" as the modeling technique that was not described in detail of how the technique will be employed in light of the invention.

### *Claim Rejections - 35 USC § 103*

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-2 and 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stark et al. U.S. Patent No. 6,540,707 (hereinafter Stark) in view of Turner et al. U.S. Publication 2002/0072828 (hereinafter Turner).

9. As for claims 1 and 11, Stark discloses a computer method comprising the steps of:

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i) providing pressure (col. 3 lines 9-10) and acceleration (col. 9 lines 10-11) sensors; ii) mounting said sensors in a knee-enclosing device (col. 9 line 16); iii) transmitting the data produced by said sensors during actual operation of said knee-enclosing device worn by a specific individual (col. 9 lines 15-22); iv) receiving said sensor signals for subsequent analysis by a computer (col. 3 lines 10-15);

Stark does not specifically disclose a computer method comprising the steps of: v) creating a stress-and-acceleration map based on said sensor-based data; vi) creating a virtual orthodic (model) for support and comfort based on step v) stress-and-acceleration map; and vii) constructing a physical orthodic based on a design provided by the virtual orthodic.

However, Turner discloses a computer method comprising the steps of: creating an I/O map based on an empirical input data from sensory devices (page 5, paragraph 42); creating a general I/O shape (model) based on the I/O map (page 5, paragraph 41); and constructing a physical entity based on the optimized developed model (page 6, paragraph 53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the process of creating a physical object based on a model of Turner with the computer method of Stark because it would provide for using the sensors data that has been analyzed and trained to form a custom design physical entity in financial or medical reason.

10. As for claim 2, Stark discloses a method according to claim 1, comprising a step of using temperature, moisture, and skin conductivity sensors which are correlated with a worn orthodic (col. 2 lines 49-57).

11. As for claim 6, Stark discloses a method according to claim 1, however, Stark does not specifically disclose a method of using non-linear techniques to model an optimal orthodic.

Turner discloses a method of using non-linear techniques to model an optimal orthodic (page 7, paragraph 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the non-linear technique of Turner with the computer method of Stark because it would provide for using the sensors data that has been analyzed and trained with non-linear technique to form a custom design physical entity in financial or medical reason.

12. As for claim 7, Stark does not specifically disclose a method according to claim 6, comprising a step of employing neural networks as the modeling technique.

However, Turner discloses a method of employing neural networks as the modeling technique (page 7, paragraph 62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the neural networks technique of Turner with the computer method of Stark because it would provide for using the sensors data that has been analyzed and trained with neural networks technique to form a custom design physical entity in financial or medical reason.

13. As for claim 8, Stark does not specifically disclose a method according to claim 7, comprising a step of employing regression as the modeling technique.

However, Turner discloses a method of employing regression as the modeling technique (page 6, paragraph 58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the regression technique of Turner with the computer method of Stark because it would provide for using the sensors data that has been analyzed and trained with regression technique to form a custom design physical entity in financial or medical reason.

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14. As for claim 9, Stark does not specifically disclose a method according to claim 7, comprising a step of employing expert systems or fuzzy logic as the modeling technique.

However, Turner discloses a method of employing expert systems or fuzzy logic the modeling technique (page 2, paragraph 18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the expert systems or fuzzy logic technique of Turner with the computer method of Stark because it would provide for using the sensors data that has been analyzed with the expert systems or fuzzy logic technique to form a custom design physical entity in financial or medical reason.

15. As for claim 10, Stark discloses a method according to claim 1, comprising the step of optimizing the design of the virtual orthodic subject to internal or external constraints (col. 5 lines 22-31).

16. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stark in view of Turner and further in view of Wang U.S. Patent No. 5,799,296.

17. As for claim 3, Stark and Turner disclose a method according to claim 1, comprising a step of mapping stresses and accelerations experienced by a knee.

Stark and Turner do not specifically disclose the use of interpolation techniques to analyze data over a period of time.

However, Wang discloses the use of interpolation techniques to analyze data over a period of time (col. 3 lines 37-40).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interpolation techniques of Wang with the computer method of Stark and Turner because it would provide for analyzing sensory data with interpolation techniques in order to perform a continuous logic computation with an advantage of extremely easy to tune.

18. As for claim 4, Stark and Turner disclose a method according to claim 3, comprising a step of updating the virtual orthodic model using the map (page 7, paragraph 61 of Turner).

Stark and Turner do not specifically disclose the use of interpolation techniques to analyze data over a period of time.

However, Wang discloses the use of interpolation techniques to analyze data over a period of time (col. 3 lines 37-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interpolation techniques of Wang with the computer method of Stark and Turner because it would provide for analyzing sensory data with interpolation techniques in order to perform a continuous logic computation with an advantage of extremely easy to tune.

19. As for claim 5, Stark and Turner disclose a method according to claim 4, comprising a step of to directly design the virtual orthodic in an optimal manner using the map (page 7, paragraph 61 of Turner).

Stark and Turner do not specifically disclose the use of interpolation techniques to analyze data over a period of time.

However, Wang discloses the use of interpolation techniques to analyze data over a period of time (col. 3 lines 37-40).



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It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interpolation techniques of Wang with the computer method of Stark and Turner because it would provide for analyzing sensory data with interpolation techniques in order to perform a continuous logic computation with an advantage of extremely easy to tune.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Thomas Pham; whose telephone number is (703) 305-7587 and fax number is (703) 746-8874. The examiner can normally be reached on Monday-Friday from 7:30AM- 4:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, *John Follansbee*, can be reached on (703) 305-8498 or via e-mail addressed to [*joh.follansbee@uspto.gov*].

Any response to this office action should be mailed to: **Director of Patents and Trademarks Washington, D.C. 20231**, or **Hand-delivered** responses should be brought to **Crystal Park II, 2121 Crystal Drive Arlington, Virginia, (Receptionist located on the 4th floor)**, or faxed.

The following fax numbers apply:

Official	(703) 746 - 7239
Non Official/ Draft	(703) 746 - 7240
After Final	(703) 746 - 7238

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [*thomas.pham@uspto.gov*].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Thomas K. Pham  
Patent Examiner

tp  
June 19, 2003

*Ramesh Patel*  
RAMESH PATEL 7/7/03  
PRIMARY EXAMINER  
*For Anil Khatri*